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1. A method of measuring parameters of an electronic system by reference to a series of data samples comprising the steps of:
 - 5 (a) recovering a clock signal from an input signal received from the electronic system;
 - (b) sampling and digitising said recovered clock signal to produce a series of digital clock samples;
 - (c) processing said digital clock samples digitally with reference to a local digital reference signal to produce digital baseband frequency in-phase (I) and quadrature (Q) components;
 - 0 (d) processing said digital I and Q components to extract digital phase information of said clock signal; and
 - (e) processing said digital phase information to determine a parameter of the electronic system.
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2. A method as claimed in claim 1 wherein step (c) is implemented using a digital signal down-converter IC of a type suitable for digital radio receiver implementations.
- 0 3. A method as claimed in claim 1 wherein the steps (d) and (e) are implemented in a single programmable digital signal processor chip.
4. A method as claimed in claim 1 wherein the network further comprises the step (b) frequency-dividing said recovered clock signal prior to said sampling step.
- 5 5. A method as claimed in claim 1 wherein the frequency dividing step is performed so as to fix the frequency of the digital clock signal for sampling while measuring recovered clock signals of different frequencies.
6. A method as claimed in claim 1 wherein the processing of said digital clock samples to produce baseband frequency in-phase (I) and quadrature (Q) components comprises splitting said digital clock samples into at least two components and mixing them with respective reference signals derived from a said local digital reference signal.

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7. A method as claimed in claim 1 wherein the processing of said baseband frequency I and Q components to extract phase information further comprises the step of filtering and decimating said I and Q components.

8. A method as claimed in claim 1 wherein the step of extracting phase information comprises applying an inverse tangent function to said filtered and decimated I and Q components by digital signal processing.

9. A method as claimed in claim 1 wherein the phase of said local digital reference signal is controlled in response to the extracted phase information as part of a phase-locked loop (PLL).

10. A method as claimed in claim 9 wherein the extracted digital phase information is processed into clock jitter data at step (e) by digitally filtering the phase information outside the phase-locked loop.

11. A method as claimed in claim 9 wherein said filtering comprises high-pass digital filtering of the phase information.

12. A method as claimed in claim 11 wherein the filtering further comprises a low-pass digital filter stage additional to that in the phase-locked loop.

13. A method as claimed in claim 1 wherein said local digital reference signal is an externally sourced timing signal, independent of the received signal.

14. A method as claimed in claim 13 wherein the extracted digital phase information is processed into clock time interval error (TIE) data by filtering this phase information.

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15. A method as claimed in claim 14 wherein the filtering comprises low-pass digital filtering of the phase information.

16. A method as claimed in claim 14 wherein the resultant time interval error data is further processed to derive wander data.

17. A method as claimed in claim 1 implemented in a form of hardware switchable between phase-locked and independent reference signals according to the measurement desired.

18. A method as claimed in claim 1 wherein the method is used as pre-processing for a composite measurement comprising at least one of MTIE, MRTIE, TDEV, RMS and Pb-Px, as defined by any ITU standard.

19. A method as claimed in claim 18 wherein said pre-processing and the derivation of said composite measurement are performed within a single digital signal processor.

20. (Amended) An apparatus for measuring parameters of an electronic system by reference to a series of data samples, comprising:

clock recovery circuitry for recovering a clock signal from an input signal received from the electronic system;

a sampler for sampling and digitising said recovered clock signal to produce a series of digital clock samples; and

a processor for processing said digital clock samples digitally with reference to a local digital reference signal to produce digital baseband frequency in-phase (I) and quadrature (Q) components, processing said digital I and Q components to extract digital phase information of said clock signal, and processing said digital phase information to determine a parameter of the electronic system.